

REMARKS

Applicants appreciate the thorough examination of the present application as evidenced by the Action mailed March 6, 2009. Claims 1, 8–11, 13 and 15 are pending in this application. Responsive to the Action, Applicants respectfully request entry of the present amendment and further consideration of this application in view of the amendment above and the remarks below.

Support for Claim Amendments:

The amendments presented above have been made to recite particular features of the inventions so as to expedite the prosecution of the present application to allowance in accordance with the USPTO Patent Business Goals (65 Fed. Reg. 54603, September 8, 2000). These amendments do not represent an acquiescence or agreement with any of the outstanding rejections.

Applicants amend claim 1 and 8 herein to more particularly point out what Applicants regard as the invention. Support for the present amendments can be found throughout the application as filed, and particularly on page 3, lines 20–23 of the specification. The points and issues raised by the Examiner in the Action are addressed hereinbelow.

Claim Rejections - 35 U.S.C. § 103

Claims 1, 8, 10, 11, 13 and 15 stand rejected under 35 U.S. C. § 103(a) as being unpatentable over Takahashi et al. (2000) *J. Mater. Sci.* **10**:2346–2348 (hereinafter, “Takahashi et al.”) in view of Sasaki et al. (1999) *J. Mater. Sci. Lett.* **18**:1193–1195 (hereinafter, “Sasaki et al.”). The Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the Fe/S flux ratio in the process of Takahashi et al. as suggested by Sasaki et al. to form a pure pyrite film at lower temperatures, such as in the claimed range. Applicants respectfully traverse this rejection.

The guidelines for determining obviousness have been outlined in a previously filed paper. Takahashi et al. discuss a vapor-phase deposition method for preparing thin films of iron pyrite performed at atmospheric pressure using FeCl₃ and CH₃CSNH₂ as source materials at

temperatures between 450 and 550°C. By the admission of the Examiner previously and in the Action, Takahashi et al. do not teach a method wherein the growth temperature is between 375°C to 425°C.

As noted by the Examiner, Sasaki et al. discuss that marcasite and pyrrhotite free pyrite films were prepared by low pressure MOCVD. The iron pyrite films of Sasaki et al. were made by a double source evaporation of sulfur and iron in a vacuum bell jar (*see*, col. 2, lines 1–3 of Sasaki et al.). The Examiner relies on the disclosures of Sasaki et al., for the suggestion of forming a pure pyrite film at lower temperatures, such as in the instantly claimed range.

As amended herein, the claimed method of preparing a metal sulfide film takes place at atmospheric pressure. Applicants thus submit that the disclosures of Takahashi et al. and Sasaki et al., alone or in combination, do not describe all the limitations of the instantly claimed invention, i.e., CVD at atmospheric pressure and at temperatures between 375–425°C.

Furthermore, there is no teaching, suggestion or motivation to combine the temperature ranges suggested by in the disclosures of Sasaki et al., which are related to low pressure MOCVD, with the disclosures of Takahashi et al., which are related to atmospheric pressure CVD. In view of the foregoing, Applicants submit that the instantly claimed invention is not obvious over the cited prior art, and respectfully request that the instant rejection be withdrawn.

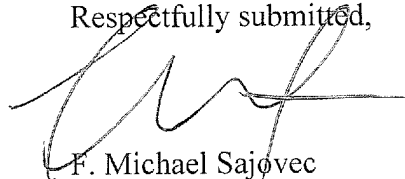
Attorney Docket No. 5576-177
In re: Takahashi et al.
Application No.: 10/525,443
Filed: February 24, 2005

CONCLUSION

Accordingly, Applicants submit that the present application is in condition for allowance and the same is earnestly solicited. Should the Examiner have any small matters outstanding of resolution, he is encouraged to telephone the undersigned at 919-854-1400 for expeditious handling.

No fee is believed due with the filing of this paper. This amount is believed to be correct. However, the Commissioner is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-0220.

Respectfully submitted,

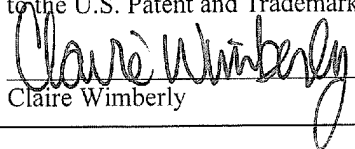


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Claire Wimberly